

IN THE CLAIMS

Please amend/replace claims 1, 7, 10, 11 and 17-19 and cancel claims 2, 12 and 20-22 as follows:

Claim 1. (Currently Amended) A method for limiting current and voltage in a PM electric machine comprising:

receiving a voltage command indicative of a desired position control;

~~obtaining a velocity value indicative of a rotational velocity of said electric machine;~~

computing a first voltage threshold for said electric machine based on a selected operating condition; and

if said voltage command exceeds said first voltage threshold, establishing a modified voltage command as substantially equivalent to said first voltage threshold, otherwise establishing a modified voltage command as substantially equivalent to said voltage command, wherein at least one of said voltage command and said first voltage threshold being based on temperature.

Claim 2. (Cancelled)

Claim 3. (Original) The method of Claim 1 wherein said first voltage threshold corresponds to a selected maximum voltage for said electric machine at said selected operating condition.

Claim 4. (Original) The method of Claim 3 wherein said selected operating condition includes a velocity of said electric machine.

Claim 5. (Original) The method of Claim 3 wherein said selected operating condition includes a rated torque profile of said electric machine.

Claim 6. (Original) The method of Claim 1 further including computing a second voltage threshold for said electric machine based on another selected operating condition; and

if said voltage command is less than said second voltage threshold, establishing said modified voltage command as substantially equivalent to said second voltage threshold, otherwise establishing said modified voltage command as substantially equivalent to said voltage command.

Claim 7. (Currently Amended) ~~The method of Claim 6 wherein A~~
method for limiting current and voltage in a PM electric machine comprising:

receiving a voltage command indicative of a desired position control;

computing a first voltage threshold for said electric machine based on a selected operating condition; and

if said voltage command exceeds said first voltage threshold, establishing a modified voltage command as substantially equivalent to said first voltage threshold, otherwise establishing a modified voltage command as substantially equivalent to said voltage command;

computing a second voltage threshold for said electric machine based on another selected operating condition, said second voltage threshold corresponds
corresponding to a selected minimum voltage for said electric machine at said another selected operating condition; and

if said voltage command is less than said second voltage threshold, establishing said modified voltage command as substantially equivalent to said second voltage threshold, otherwise establishing said modified voltage command as substantially equivalent to said voltage command.

Claim 8. (Original) The method of Claim 7 wherein said another selected operating condition includes a velocity of said electric machine.

Claim 9. (Original) The method of Claim 7 wherein said another selected operating condition includes a rated torque profile of said electric machine.

Claim 10. (Currently Amended) A system for limiting current and voltage in a PM electric machine comprising:

a PM electric machine;

a position sensor configured to measure a position of said electric machine and transmit a position signal;

a controller, ~~said controller~~ in operable communication with a voltage source and said electric machine and said position sensor, said controller computing a voltage command responsive to a desired position control;

wherein if said voltage command exceeds a first voltage threshold, said controller establishes a modified voltage command as substantially equivalent to said first voltage threshold, otherwise said controller establishes a modified voltage command as substantially equivalent to said voltage command, wherein at least one of said voltage command, said first voltage threshold, and said second voltage threshold being based on temperature.

Claim 11. (Currently Amended) The system of Claim 10 further including an inverter in operable communication between said voltage source and said electric machine, said inverter also in operable communication with said controller and configured to generate a phase voltage to said ~~motor~~ electric machine based on said modified voltage command.

Claim 12. (Cancelled)

Claim 13. (Original) The system of Claim 10 wherein said first voltage threshold corresponds to a selected maximum voltage for said electric machine at a selected operating condition.

Claim 14. (Original) The system of Claim 13 wherein said selected operating condition includes a velocity of said electric machine.

Claim 15. (Original) The system of Claim 13 wherein said selected operating condition includes a rated torque profile of said electric machine.

Claim 16. (Original) The system of Claim 10 further including: if said voltage command is less than a second voltage threshold, said controller establishes said modified voltage command as substantially equivalent to said second voltage threshold, otherwise said controller establishes said modified voltage command as substantially equivalent to said voltage command.

Claim 17. (Currently Amended) ~~The system of Claim 16~~ A system for limiting current and voltage in a PM electric machine comprising:

a PM electric machine;

a position sensor configured to measure a position of said electric machine and transmit a position signal;

a controller in operable communication with a voltage source and said electric machine and said position sensor, said controller computing a voltage command responsive to a desired position control;

wherein if said voltage command exceeds a first voltage threshold, said controller establishes a modified voltage command as substantially equivalent to said first voltage threshold, otherwise said controller establishes a modified voltage command as substantially equivalent to said voltage command; and

if said voltage command is less than a second voltage threshold, said controller establishes said modified voltage command as substantially equivalent to said second voltage threshold, otherwise said controller establishes said modified voltage command as substantially equivalent to said voltage command, wherein said second voltage threshold corresponds to a selected minimum voltage for said electric machine at said another a first selected operating condition.

Claim 18. (Currently Amended) The system of Claim 17 wherein said ~~another~~ first selected operating condition includes a velocity of said electric machine.

Claim 19. (Currently Amended) The system of Claim 17 wherein said ~~another~~ first selected operating condition includes a rated torque profile of said electric machine.

Claim 20. (Cancelled)

Claim 21. (Cancelled)

Claim 22. (Cancelled)